

Claims:

1. A method for controlling a suspend state of a packet-switched service concerning a terminal device that is provided with both circuit-switched and packet-switched services by a first communication network but which terminal device can only use either a circuit-switched or a packet-switched service at a time, **characterized** in that, in a situation in which the terminal device enters into the suspend state in a packet-switched service in order to use a circuit-switched service, the method comprises:
  - 10 supplying information about the terminal device's entry into the suspend state to a gateway node of said first communication network.
2. A method according to claim 1, wherein the packet-switched service comprises implementing a packet-switched link between the terminal device and a second communication party outside the first communication network through said gateway node.
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3. A method according to claim 2, wherein said second communication party is a server or a second terminal device.
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4. A method according to claim 2 or 3, which comprises selecting said link from a set comprising the following links: a Transmission Control Protocol (TCP) connection, a User Datagram Protocol (UDP) connection, a Wireless Profiled TCP (WP-TCP) connection.
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5. A method according to any of the preceding claims, wherein the information about the terminal device's entry into the suspend state is supplied by means of signalling or a specific message.
- 30 6. A method according to any of the preceding claims, wherein said gateway node is an edge point of the first communication network towards other net-

works, such as an Internet Protocol (IP) network.

7. A method according to any of the preceding claims, wherein said first communication network is a mobile communication network, such as a GPRS network.  
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8. A method according to any of the preceding claims, wherein said gateway node is a gateway support node of a packet radio network such as a Gateway GPRS Support Node (GGSN) of a General Packet Radio Service (GPRS) network.  
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9. A method according to claim 8, which comprises providing a serving support node of a packet radio network, such as a Serving GPRS Support Node (SSGN), with information about the terminal device's entry into the suspend state, and transferring this information to the gateway support node of the packet radio network by means of signalling or a specific message.  
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10. A method according to any of the preceding claims, wherein said gateway node performs an action as a response to said information supplied to it.  
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11. A method according to claim 10, wherein said action comprises sending of a certain message, such as an Internet Control Message Protocol (ICMP) or an Explicit Congestion Notification (ECN) message, towards said second communication party in order to restrict or prevent the sending of packets.  
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12. A method according to claim 11, which comprises sending said message to a proxy, such as a Wireless Application Protocol (WAP) gateway/proxy.
13. A method according to any of the preceding claims, which method comprises:  
30 supplying information about the terminal device's return from the suspend state, to the gateway node of said first communication network.

14. A communication device that is configured to use both circuit-switched and packet-switched services provided by a communication network, but which communication device can only use either a circuit-switched or a packet-switched service at a time, **characterized** in that, for a situation in which the communication device enters into the suspend state in a packet-switched service in order to use a circuit-switched service, the communication device comprises:

means for sending information about the communication device's entry into the suspend state in order to supply said information to a gateway node of the communication network.

15. A communication device according to claim 14, which communication device is a mobile device configured to operate with a cellular communication network.

16. A network element of a first communication network for controlling a suspend state of a packet-switched service concerning a terminal device that is provided with both circuit-switched and packet-switched services by the first communication network, but which terminal device can only use either a circuit-switched or a packet-switched service at a time, **characterized** in that, for a situation in which the terminal device enters into the suspend state in a packet-switched service in order to use a circuit-switched service, the network element comprises:

means for supplying information about the terminal device's entry into the suspend state to a gateway node of said first communication network.

30 17. A network element according to claim 16, wherein the packet-switched service comprises implementing a packet-switched link between the terminal device and a second communication party outside the first communication network through said gateway node.

18. A network element according to claim 17, wherein said link is selected from a set comprising the following connections: a TCP connection, a UDP connection, a WP-TCP connection.

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19. A network element according to any of the claims 16–18, which comprises means for supplying the information about the terminal device's entry into the suspend state to the gateway node of the first communication network by means of signalling or a specific message.

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20. A network element according to any of the claims 16–19, wherein said gateway node is an edge point of said first communication network towards other networks, such as an Internet Protocol (IP) network.

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21. A network element according to any of the claims 16–20, wherein said first communication network is a mobile communication network, such as a GPRS network.

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22. A network element according to any of the claims 16–21, which is a serving support node of a packet radio network, such as an SSGN of a GPRS network, which comprises means for receiving the information about the terminal device's entry into the suspend state and means for transferring the information to a gateway support node of the packet radio network, such as a GGSN of the GPRS network.

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23. A gateway node of a first communication network for controlling a suspend state of a packet-switched service concerning a terminal device that is provided with both circuit-switched and packet-switched services by the first communication network, but which terminal device can only use either a circuit-switched or a packet-switched service at a time, **characterized** in that, for a situation in which the terminal device enters into the suspend state

in a packet-switched service in order to use a circuit-switched service, the gateway node comprises:

means for receiving information about the terminal device's entry into the suspend state.

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24. A gateway node according to claim 23, wherein the packet-switched service comprises implementing a packet-switched link between the terminal device and a second communication party outside the first communication network through said gateway node.

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25. A gateway node according to claim 24, wherein said second communication party is a server or a second terminal device.

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26. A gateway node according to claim 24 or 25, selecting said link from a set comprising the following connections: a TCP connection, a UDP connection, a WP-TCP connection.

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27. A gateway node according to any of the claims 23–26, which comprises means for receiving signalling or a specific message telling about the terminal device's entry into the suspend state.

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28. A gateway node according to any of the claims 23–27, which is an edge point of the first communication network towards other networks, such as an Internet Protocol (IP) network.

29. A gateway node according to any of the claims 23–28, wherein said first communication network is a mobile communication network, such as a GPRS network.

30. A gateway node according to any of the claims 23–29, which is a gateway support node of a packet radio network, such as a Gateway GPRS Support

Node (GGSN) of a General Packet Radio Service (GPRS) network.

31. A gateway node according to any of the claims 23–30, which comprises means for performing an action as a response to the said information supplied to it.

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32. A gateway node according to claim 31, wherein said action comprises sending of a specific message, such as an ICMP or ECN message, towards said second communication party in order to restrict or prevent the sending of packets.

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33. A gateway node according to claim 32, which comprises sending said message to a proxy, such as a WAP gateway/proxy.

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34. A system for controlling a suspend state of a packet-switched service concerning a terminal device, which system comprises said terminal device and a gateway node of a first communication network, which terminal device is provided with both circuit-switched and packet-switched services by the first communication network, but which terminal device can only use either the circuit-switched or the packet-switched service at a time, **characterized** in that, for a situation in which the terminal device enters into the suspend state in a packet-switched service in order to use a circuit-switched service, the terminal device comprises:

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means for sending information about the terminal device's entry into the suspend state in order to supply said information to a gateway node of said first communication network, and which gateway node comprises:

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means for receiving the information about the terminal device's entry into the suspend state.

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35. Computer software executable in a network element of a first communication network for controlling a suspend state of a packet-switched service concerning a terminal device that is provided with both circuit-switched and packet-

switched services by the first communication network, but which terminal device can only use either a circuit-switched or a packet-switched service at a time, **characterized** in that, for a situation in which the terminal device enters into the suspend state in a packet-switched service in order to use a circuit-switched service, the computer software comprises:

5 program code causing the network element to supply information about the terminal device's entry into the suspend state to a gateway node of said first communication network.

10 36. Computer software executable in a gateway node of a first communication network for controlling a suspend state of a packet-switched service concerning a terminal device that is provided with both circuit-switched and packet-switched services by the first communication network, but which terminal device can only use either a circuit-switched or a packet-switched service at a time, **characterized** in that, for a situation in which the terminal device enters into the suspend state in a packet-switched service in order to use a circuit-switched service, the computer software comprises:

15 program code causing the gateway node to receive information about the terminal device's entry into the suspend state.

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